

Revised Preliminary Issue Sheets – T#7, T#5, W#6 Oroville Facilities Relicensing (FERC Project No. 2100)

Oroville Facilities Relicensing Environmental Work Group Preliminary Issue Sheet

T7. Project Effects on Noxious Terrestrial and Aquatic Plant Species

Issue Statement: Effects of the project on the introduction, distribution and management of noxious terrestrial and aquatic weeds.

Resource Goals (desired conditions):

- Map noxious weeds as part of statewide mapping process (study) Incorporate project lands in statewide mapping process of noxious weeds.
- Develop and implement plans for controlling noxious weeds. (study) Control noxious weeds of greatest ecological and agricultural concern
- Remove undesirable non-native plant species around lake, river, forebay and afterbay areas especially star thistle, ailanthus, and other invasive plant species
- Restore disturbed sites with native plant communities
- Determine project-related effects on dispersal of noxious weeds into downstream irrigation canals
- Minimize project-related effects on the dispersal of noxious weeds

Scope:

Within the FERC project boundary and as appropriate outside of project boundary for project related effects (i.e. downstream irrigation canals and downstream Feather River floodplain to the confluence with the Yuba River). (discuss water-borne vs air-borne elements at task force level; DPR scope expansion)

Existing Information:

1. California Exotic Plant Pest Council, Pest Plants of Greatest Ecological Concern, October 1999.
2. California Department of Food and Agriculture, Pest ratings of noxious weed species and noxious weed seeds.
3. Butte County Integrated Weed Management Plan
4. Plumas National Forest, Known or Potential Noxious Weeds List, completed 3/98.
5. Species Identification and Management Information via web pages (i.e. National Park Service, The Nature Conservancy, Universities, State agencies, etc.)
6. Plumas-Sierra Noxious WEEDS Management Group, 2000 Strategic Plan
7. California Department of Transportation, Biological control, hand control, and test plot data for yellow star thistle and purple loosestrife
8. California Department of Fish and Game control and test plot data
9. California Department of Food and Agriculture mapping of purple loosestrife infestations
10. California Department of Fish and Game-Oroville Wildlife Area control and test plot data
11. California Department of Transportation control and test plot data
12. California Waterfowl Association weed abatement experiments
13. Butte County Agriculture Commission control and test plot data
14. Butte County Weed Management Area noxious weed location database (upcoming)
15. Local Irrigation control data
16. Habitat preferences for each pest species (i. e. Factors affecting distribution)

17. DWR weed control plan
18. Information from State Parks of local situation
19. (include any existing articles within the current license that apply)

Information Needed:

1. Identify list of noxious weeds
2. Mapping effort to identify the current distribution of noxious terrestrial and aquatic plant species
3. Identification of potential abatement methodologies, costs (include in all) and their potential impact on other resources or land uses
4. Evaluation of potential project effects (i.e. lake and river water levels) on the distribution of noxious weeds
5. Data on weed infestations upstream (i.e. local reservoirs) that feed into the Oroville project area
6. Mechanisms relating project to noxious weeds.

Level of Analysis:

Evaluate potential project effects using mapping of noxious weeds and the factors influencing their distribution. As appropriate, identify potential abatement methodologies and their potential impact on other resources or land uses.

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T5. Project Effects on Riparian Resources and Wetlands

Issue Statement: Project effects on riparian resources and protection and management of riparian habitat and wetlands (including vernal pools and brood ponds).

Resource Goals:

- Eliminate, reduce, and/or control project-related effects to maintain and enhance the viability and sustainability of riparian ecosystems along the Feather River.
- Eliminate, reduce, and/or control project-related effects to maintain and enhance wetlands, including floodplain and upland wetlands, vernal pools, and brood ponds, within the project boundary.

Scope:

The study area will include lands within the project boundary, and along the Feather River downstream to the Yuba River. (clarify if this is 100 year floodplain, to the levees, or what the limit would be)

Existing Information:

1. USFWS National Wetland Inventory – GIS dataset of wetlands in Butte County
2. USFS vegetation/wetland mapping – vegetation mapping performed by Plumas National Forest on USFS lands
3. SCS Soil Survey – Butte County soil survey to identify those types of hydric soils that support wetlands
4. USGS 7.5-minute quad maps – USGS mapping of wetlands, riparian areas, and elevational contours
5. Geographic Information Center (CSU Chico) aerial mapping – ArcView GIS dataset of stand-level mapping of riparian vegetation along the Feather River from the Oroville fish barrier to the Sacramento River

6. Aerial photographs (Current and historical) – changes in riparian zones and channel morphology to determine the extent of change
7. Check with California Waterfowl Association

Information Needed:

1. Mapping of riparian areas within the project boundary and along the Feather River, bank types, upland and floodplain wetlands, vernal pools, and brood ponds.
2. Extent and composition of the riparian areas along the length of the Feather River down to the Yuba River, including, but not limited to, species composition, dominant species, stand density, canopy closure, ground cover, demographics, and types of impacts, if any. Past, current, and proposed flow regimes to project flow-level alterations of riparian areas. Near-river water table levels to determine the effect of differing flow levels on riparian vegetation. Identify potential areas for the restoration, enhancement, and creation of new riparian and wetland areas.
3. Types of banks present, their susceptibility to erosion, and vegetative cover along the Lower Feather River
4. Extent of wetlands and vernal pools within the project boundary and within the active Feather River floodplain down to the Yuba River. Location and mapping of artificial brood ponds within the project boundary.

Copy to all others: Conceptual model of mechanisms relating potential project effects to resource in question.

Level of Analysis:

Use mapping and data on riparian resources along with factors affecting riparian resources to determine effects of (think about non-flood) flow regimes.

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W6. Metals Accumulation in Sediments and Organisms (expand to address entire issue statement)

Issue Statement: Effect of existing and future project facilities and operations on sediment deposition and potential impoundment of metals and toxins, including the potential presence and uptake of methylmercury through the food chain. Lake Oroville, fed by tributaries that have a history of gold mining activity, has potential for accumulation of elemental mercury in its basin sediments.

Resource Goals:

Identify and if feasible, Eliminate,(consider what is possible – can elimination be achieved?) reduce, or control project effects upon bioaccumulation in the aquatic food chain of metals and other toxic contaminants.

Scope:

Within project waters, including Lake Oroville, Thermalito Forebay and Afterbay, Feather River downstream from Lake Oroville to the Yuba River, and the Oroville Wildlife Area.

Existing Information:

1. Goals and criteria:
 - a. Water Quality Control Plan (Basin Plan) for the Central Valley - designation of beneficial uses and specifies water quality objectives
 - b. California Toxics Rule - specifies criteria for protection of aquatic life and human health
 - c. U.S. EPA National Toxics Rule - specifies criteria for protection of aquatic life and human health
 - d. Irrigation and Drainage Paper No. 29, Food and Agriculture Organization of the United Nations - agriculture water quality goals
2. Waters from the North, Middle, and South forks of the Feather River upstream from Lake Oroville were monitored bimonthly from 1992 to mid-1997 for metals (drinking water criteria), and quarterly since August 2000 for low-level metals (environmental criteria). Benthic macroinvertebrate abundance was analyzed from the North and Middle forks in September 1995.
3. Water from Lake Oroville at the dam was sampled for dissolved iron in August 1977, and dissolved aluminum, arsenic, chromium, copper, iron, lead, manganese, and selenium in April 1989 (drinking water criteria).
4. Water from the Feather River downstream from Oroville Dam was monitored bimonthly from 1992 to mid-1997 at the USGS gage for metals (drinking water criteria), and quarterly since August 2000 for low-level metals (environmental criteria). Benthic macroinvertebrate abundance was analyzed from samples collected in September 1995. The lower Feather River is on the Regional Board 303(d) list for mercury and unknown toxicity.
6. Thermalito Forebay Power Canal surface water is sampled at three month intervals for metals (drinking water criteria).
7. Thermalito Afterbay surface water is sampled monthly at the Feather River Outlet for metals (drinking water criteria).
8. State Water Resources Control Board Toxic Substances Monitoring Program - database from 1978 to 1995; significant levels of mercury and other metals were found in suckers, catfish, and bass from the Feather River downstream from Oroville Dam and in the vicinity of Highway 99.

Information Needed:

1. Tributaries - Analysis of sediments and sport fish species at the confluence of tributaries (e.g., North, Middle, and South forks, West Branch, Concow, Berry, and Canyon creeks, and Sucker Run) to Lake Oroville for metals and organic contaminant concentrations. If significant concentrations of metals or organic contaminants found, then aquatic organisms comprising the food chain, such as aquatic macroinvertebrates, would be analyzed for the presence of metals and organic contaminants.
2. Reservoir - Analysis of sediments and warm- and cold-water sport fish species for the presence of metals and organic contaminants in the tributary arms and main body of the reservoir. If significant concentrations of metals or organic contaminants found, then aquatic organisms comprising the food chain, such as prey fish species, phytoplankton, and zooplankton, would be analyzed for the presence of metals and organic contaminants.
3. Feather River downstream from Oroville Dam - Analysis of sediments and sport fish species within the project area for the presence of metals and organic contaminant concentrations. If significant concentrations of metals or organic contaminants found, monitoring of fish would be extended to the confluence of the Yuba River and aquatic organisms comprising the food chain, such as aquatic macroinvertebrates, would be analyzed for the presence of metals and organic contaminants.
4. Thermalito Diversion Pool, Forebay and Afterbay - Analysis of sediments and sportfish species in the Thermalito Diversion Pool, Forebay, and Afterbay for the presence of metals and organic contaminant concentrations. If significant concentrations of metals or organic contaminants found, then aquatic organisms comprising the food chain, such as prey fish species and aquatic macroinvertebrates, would be analyzed for the presence of metals and organic contaminants.
5. Oroville Wildlife Area - The Oroville Wildlife Area supports numerous ponds that are hydraulically connected to the Feather River. Water quality in the Feather River, therefore, will affect water quality in the wildlife area ponds. The ponds are extensively used by wildlife and recreationists. Analysis of representative ponds on both the east and west sides of the river should include sediments and sport fish

species for the presence of metals and organic contaminant concentrations. If significant concentrations of metals or organic contaminants found, then aquatic organisms comprising the food chain, such as prey fish species, phytoplankton, and zooplankton, would be analyzed for the presence of metals and organic contaminants.

6. As appropriate, results from Geology, Soils, and Geomorphic Processes studies G1 and G4.

Level of Analysis:

Conduct literature review and monitoring for metals and organic contaminants. (add methodologies, risk analysis, and other analysis tools within level of analysis)